

In re Patent Application of  
BAHLENBERG ET AL.  
Serial No. 09/529,429  
Filed: OCTOBER 30, 2000

---

REMARKS

Applicants again thank the Examiner for the careful and thorough examination of the present application, and for the indication of allowable subject matter. Claims 27-54 remain pending in the application. Favorable reconsideration is respectfully requested.

I. The Invention

As shown in FIG. 1 and described in the present specification, the disclosed invention is directed a telecommunications system including a central station and subscriber lines of different lengths. The subscriber lines are grouped into longer and shorter lines, shorter lines are defined as lines having a length less than X, and longer lines are defined as lines having a length equal to or greater than X, where X is a system parameter determined for a given telecommunications system. The system also includes a plurality of data modems connected to the central station by the subscriber lines of different lengths with duplex data being transmitted between the central station and at least one data modem using very high rate digital subscriber line (VDSL). Frequency divided duplex (FDD) is used at lower frequencies for transmissions over the longer lines and orthogonal frequency divided duplex (OFDD) is used at higher frequencies for transmissions over the shorter lines.

In re Patent Application of  
**BAHLENBERG ET AL.**  
Serial No. 09/529,429  
Filed: OCTOBER 30, 2000

---

II. The Claims are Patentable

Claims 27-29, 31-41, 43-45 and 47-54 were rejected in view of over Cioffi (U.S. Patent No. 5,673,290) taken alone or in combination with Bingham et al. (U.S. Patent No. 5,680,394) or in further combination with Isaksson et al. (U.S. 2002/0126768) or Cioffi (U.S. 5,887,032) or the Isaksson et al. "Zipper" reference for the reasons set forth on pages 2-18 of the Office Action. Claims 30, 42 and 46 were indicated as being directed to allowable subject matter. Applicants contend that Claims 27-29, 31-41, 43-45 and 47-54 clearly define over the cited references, and in view of the following remarks, favorable reconsideration of the rejections under 35 U.S.C. §103 is requested.

Independent Claims 27, 39 and 43 include subscriber lines of different lengths being grouped into longer and shorter lines, with shorter lines being defined as lines having a length less than X, and longer lines being defined as lines having a length equal to or greater than X, where X is a system parameter. The claims include transmitting duplex data between a central station and at least one of a plurality of data modems using DSL or VDSL in a telecommunications system having the plurality of data modems connected to the central station by the subscriber lines of differing lengths. A first duplex format, or Frequency Divided Duplex (FDD), is used at lower frequencies for transmissions over the longer lines, and a second duplex format, or Orthogonal Frequency Divided Duplex (OFDD), is used at higher frequencies for transmissions over the shorter lines. The associated description of such claim

In re Patent Application of  
BAHLENBERG ET AL.  
Serial No. 09/529,429  
Filed: OCTOBER 30, 2000

---

features can be found on pages 7 and 8 of the present specification referring to FIG. 1 of the drawings.

It is this combinations of features which is not fairly taught or suggested in the cited references and which patentably defines over the cited references. And, as discussed, the present invention increases VDSL capacity and reduces capacity loss for OFDD on long lines while avoiding any near-end cross-talk between ADSL and VDSL.

The Cioffi patent is directed to an ADSL compatible discrete multi-tone method. In the patent, it is mentioned that some systems have longer transmission lines and others have shorter transmission lines. However, there is no teaching of subscriber lines being grouped into longer and shorter lines based upon a system parameter, and/or Frequency Divided Duplex (FDD) being used at lower frequencies for transmissions over the longer lines and Orthogonal Frequency Divided Duplex (OFDD) being used at higher frequencies for transmissions over the shorter lines. Instead, the Examiner has mischaracterized the actual teachings of Cioffi and made numerous inherency assertions regarding this reference.

Applicants point out that MPEP §2112 sets forth that the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

In re Patent Application of  
**BAHLENBERG ET AL.**  
Serial No. 09/529,429  
Filed: OCTOBER 30, 2000

---

The Examiner refers to portions of the Cioffi patent that discuss data transfer rates being a function of variables such as transmission distance, line quality, transmission power and noise as is well known to the skilled artisan. The Examiner then relies on this common knowledge to arrive at his position that Cioffi inherently teaches grouping lines into two groups based upon a system parameter and that it would then have been obvious to use a first duplex format, or FDD, at lower frequencies for transmissions over the longer lines, and a second duplex format, or OFDD, at higher frequencies for transmissions over the shorter lines, as claimed.

Applicants specifically traverse the Examiner's assertions because: there is no teaching of subscriber lines being grouped into longer and shorter lines based upon a system parameter, and/or FDD being used at lower frequencies for transmissions over the longer lines and OFDD being used at higher frequencies for transmissions over the shorter lines; and the Examiner has not provided a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic, grouping lines into two groups based upon a system parameter, necessarily flows from the teachings of Cioffi.

The other cited references were relied upon for their respective teachings of the use of ADSL and VDSL. However, none of these references makes up for the deficiencies of Cioffi as discussed above.

As the Examiner is aware, to establish a prima facie

In re Patent Application of  
BAHLENBERG ET AL.  
Serial No. 09/529,429  
Filed: OCTOBER 30, 2000

---

case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim features. The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the Applicants have done. To support the conclusion that the claimed invention is directed to obvious subject matter, either the reference must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference. Both the suggestion to make the claimed combination and the reasonable expectation of success must be founded in the prior art and not in Applicants' disclosure.

There is simply no teaching or suggestion in the cited references to provide the combination of features as claimed. Accordingly, for at least the reasons given above, Applicants maintain that the cited references do not disclose or fairly suggest the invention as set forth in Claims 27, 39 and 43. Furthermore, no proper modification of the teachings of these references could result in the invention as claimed. Thus, the rejection under 35 U.S.C. § 103 should be withdrawn.

It is submitted that the independent claims are patentable over the prior art. In view of the patentability

In re Patent Application of  
BAHLENBERG ET AL.  
Serial No. 09/529,429  
Filed: OCTOBER 30, 2000

---

of the independent claims, it is submitted that their dependent claims, which recite yet further distinguishing features are also patentable over the cited references for at least the reasons set forth above. Accordingly, these dependent claims require no further discussion herein.

### III. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance. An early notice thereof is earnestly solicited. If, after reviewing this Response, there are any remaining informalities which need to be resolved before the application can be passed to issue, the Examiner is invited and respectfully requested to contact the undersigned by telephone to resolve such informalities.

Respectfully submitted,



PAUL J. DITMYER  
Reg. No. 40,455  
Allen, Dyer, Doppelt, Milbrath  
& Gilchrist, P.A.  
255 S. Orange Avenue, Suite 1401  
Post Office Box 3791  
Orlando, Florida 32802  
407-841-2330  
407-841-2343 fax  
Attorney for Applicants